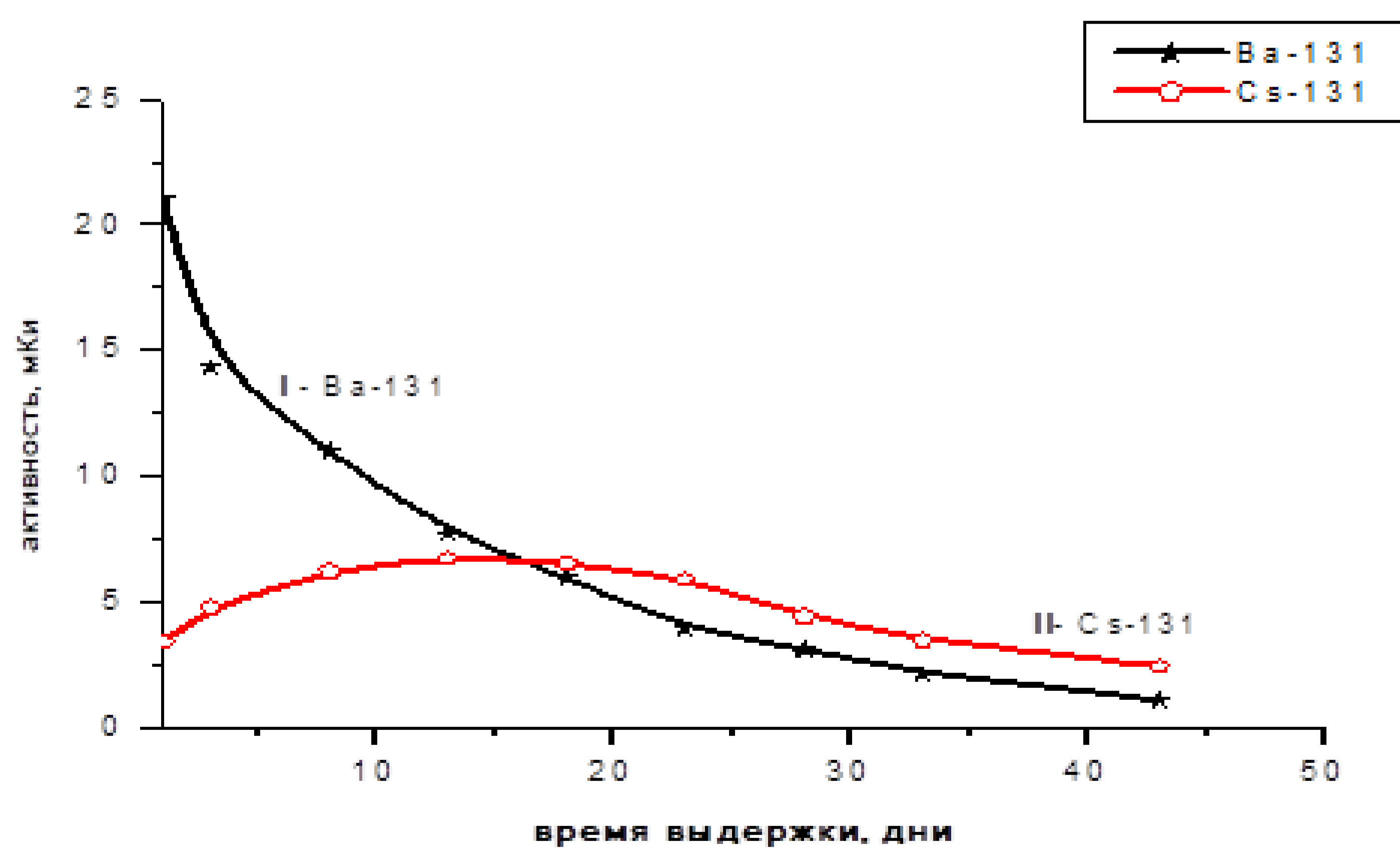
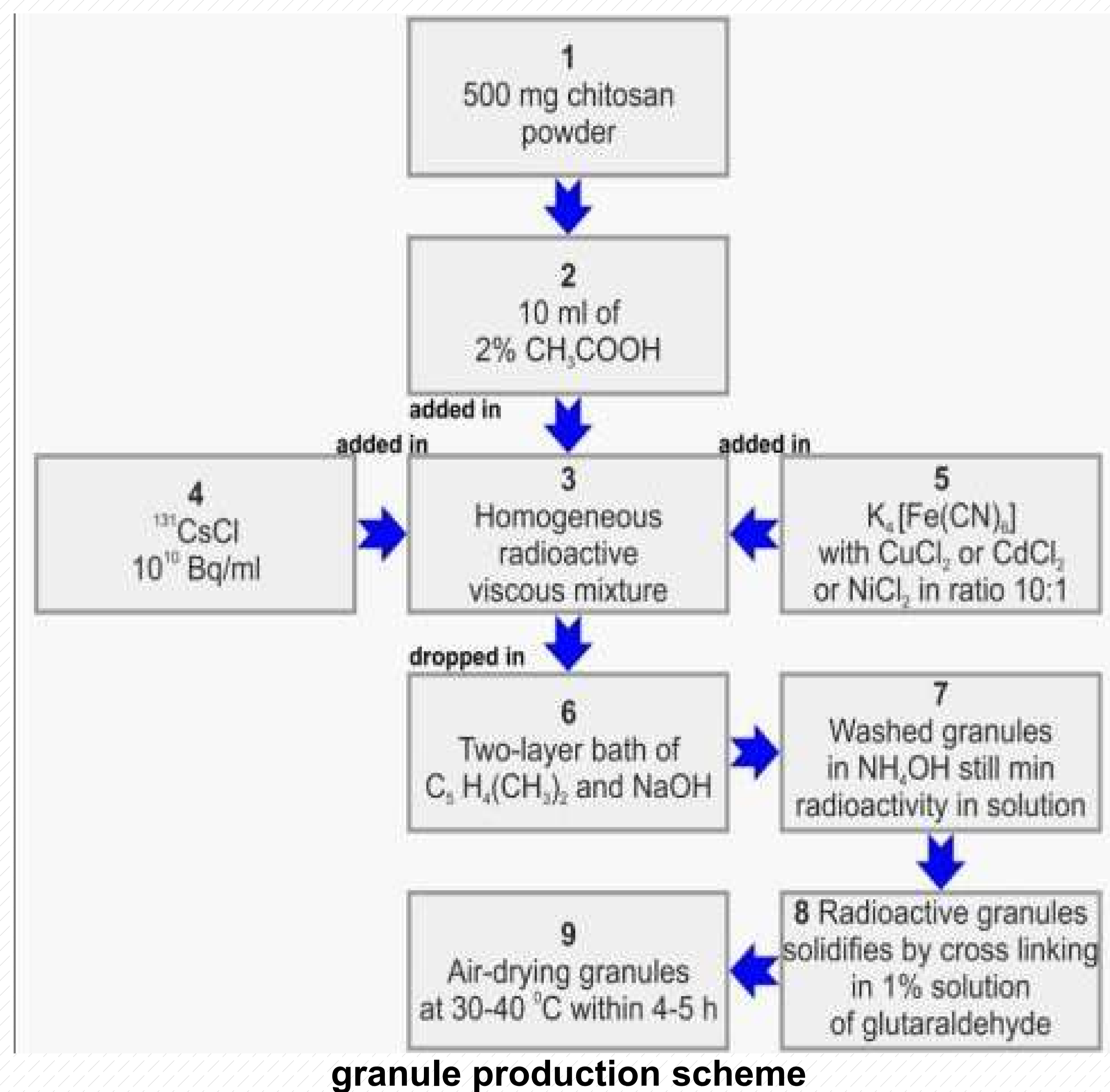




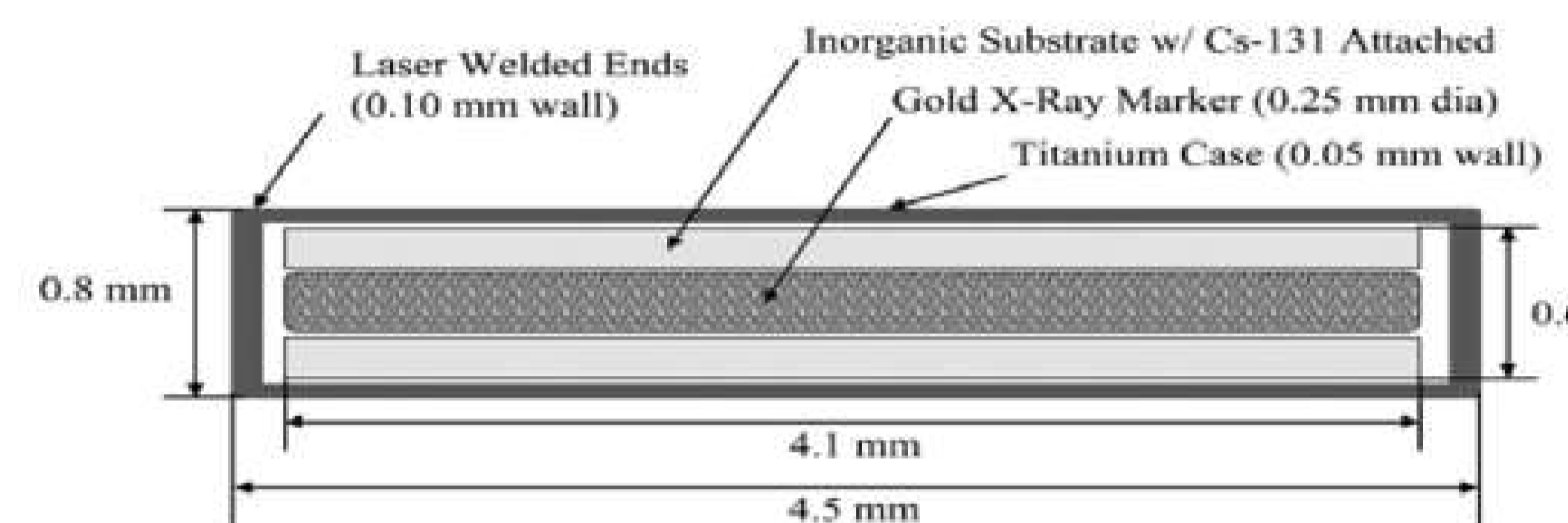
THE USE OF MODIFY CHITOSAN SORBENTS TO OBTAINING OF THE CESIUM-131 BIOPOLYMER GRANULES FOR BRACHYTHERAPY

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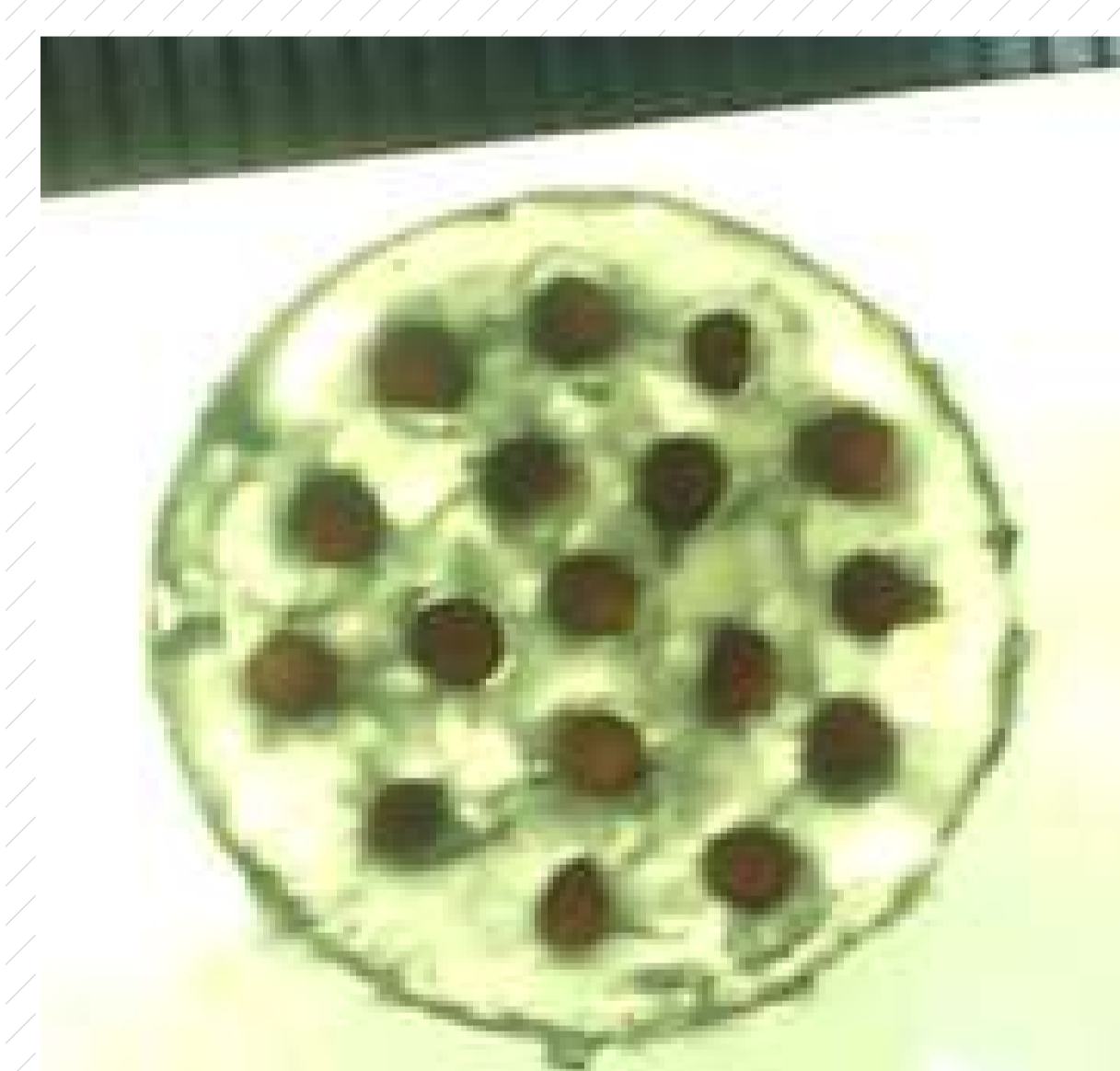
In this work was described the creation method of the hermetic granules of the X-emitters on base of ^{131}Cs for using in brachytherapy. The chitosan with modified additives are being used as a sorbent for $^{131}\text{Cs}^+$ ions. The maximal sorption of $^{131}\text{Cs}^+$ ions was obtained by adding to chitosan solution the potassium ferro(II) cyanide and copper or nickel chlorides. For forming the granules of X-emitters, the radioactive drops through of syringe were serially passed through air layer to solutions of the xylene and alkali sodium. The received granules has been crosslinking with glutaraldehyde solution for forming hardness and hermeticity spheres. The diameters and radioactivity of the granules can be regulated within $0.5 \pm 0.05 - 1.0 \pm 0.1$ mm and $(7.4 - 22.2) \cdot 10^7$ Bq, respectively.



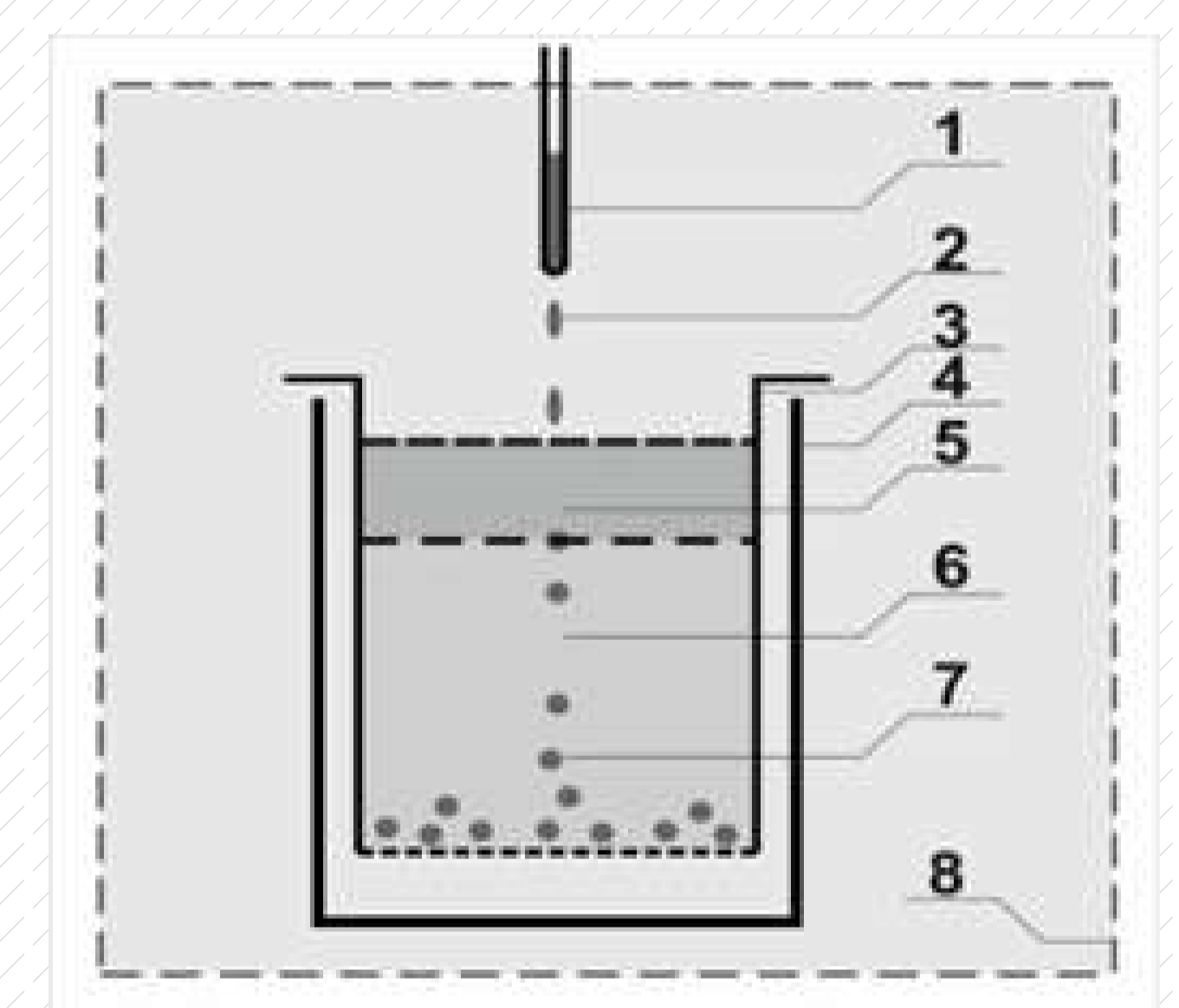
Chitosan granules with a diameter of 0.5-1.0 m with sorbed ^{131}Cs have a uniform spherical dose rate distribution in organic media. The initial activity of the granules can be adjusted in the range of



No	The name of parameter	Characteristic or norm	actually
1.	appearance	Loose mass or powder, with irregularly shaped particle	correspond
2.	color	Cream, yellowish	correspond
3.	Mass fraction of moisture, %	12	8,99
4.	Mass fraction of minerals, %	2	3,72
5.	Nitrogen content, %	6,8	8,14
6.	Solubility in 2% acetic acid	85	97,49
7.	Molecular weight		60 000
8.	Degree of deacetylation		74,37%



of 2-4 MCi with a deviation of 4-6%.



Two-layer precipitation bath to form spherical granules.



view of the granule under the microscope

